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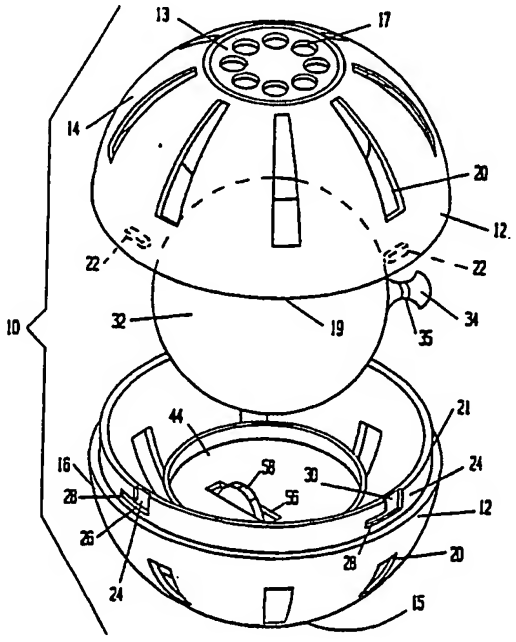

(57) Abstract

There is disclosed a ball (10) having a foraminous outer shell (12) with an inner membrane (32) which forms an interior closure within the outer shell and with a timer and a release mechanism (36) operative to open the inner membrane and release its contents after the time on the timer expires. The contents spill through the foraminous outer shell, wetting the player who is handling or catching the ball at the moment of release. The timer is activated and the ball is used in a game in which it is tossed between participants who seek to avoid becoming wet when the timer releases the water from the interior closure of the ball. The invention also includes a game in which two or more players toss and catch the ball.

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GAME AND BALL WITH WATER-RELEASING DEVICE

BACKGROUND OF THE INVENTION

Field of Invention

This invention relates to a ball and game, and in particular, to a ball with a timed water release mechanism and a game using the ball.

Brief Statement of the Prior Art

Several different activity toys involving water play resulting in wetting of the players are currently on the market. One in particular is marketed by Mattel Toys and is called WETHEAD. This product involves a hat-like device that a player wears and comprises a water container on a hat having a release valve permitting the water to empty onto the wearer's head. Only one of eight removable rods releases the water valve. The other seven placebo rods are identical and the player wearing the hat must select and remove a rod. This toy does not involve timing, tossing, or ball play. The water containing element is a hat which is not disposable and is refilled and reused during the play. Other water products that have been offered to children include sprinkler based toys, such as WATER WIGGLER, and WET BANANA. These toys attach to a garden hose and provide a constant flowing film of water on a surface which children run or slide through. These toys do not provide an element of surprise or challenge.

Parker Brothers, a game manufacturer, is currently marketing a product called HOT POTATO. This consists of a cloth covered foam "potato" that young children toss back and forth between each other. Inside the potato is an electronic sound generating device that signals the end of the play session. The player holding the potato at the end of the session must take a card spelling part of the toy's name. This product does not involve water, is not a ball, and provides no action "penalty" such as a soaking of the player.

BRIEF STATEMENT OF THE INVENTION

This invention comprises a ball having a foraminous outer shell with an inner membrane which forms an interior closure within the outer shell and with a timer and a release mechanism operative to open the inner membrane and release its contents after the time on the timer expires. The contents spill through the foraminous outer shell, wetting the player who is handling or catching the ball at the moment of release. For this purpose, the inner membrane forms an interior closure which is charged with water at commencement of play. The timer is activated and the ball is used in a game in which it is tossed between participants who seek to avoid becoming wet when the timer releases the water from the interior closure of the ball.

BRIEF DESCRIPTIONS OF THE DRAWINGS

The invention will be described with reference to the FIGURES of which:

FIGURE 1 is an exploded perspective view of the ball;

FIGURE 2 is an elevational view of the ball partially disassembled and in partial cross-section;

FIGURE 3 is a perspective view of the timer and liquid release mechanism;

FIGURE 4 is an inverted view of the timer and water release mechanism of the toy of FIGURE 1;

FIGURE 5 is an elevational view of an alternative toy of the invention partially disassembled and in partial cross-section;

FIGURE 6 is a perspective view of the timer and water release mechanism of the toy of FIGURE 5;

FIGURE 7 is a perspective view of a safety interlock for the toy of FIGURE 6;

FIGURE 8 is a perspective view of an alternative toy of the invention ; and

FIGURE 9 is a perspective view of the assembled toy of FIGURE 8; and

FIGURE 10 is an elevational sectional view of the timer and water release mechanism of the toy of FIGURES 8 and 9.

DESCRIPTION OF PREFERRED EMBODIMENT

Referring now to FIGURE 1, the invention comprises a ball 10 including an outer foraminous shell 12 that is preferably having two hemispherical half shells 14 and 16, each of which has a plurality of through apertures in the form of elongated slots 20 at equally spaced angular increments about their circumference. Opposite ends of 13 and 15 the assembled shell are flatted, and the flat of the upper hemispherical half shell 14 is perforated with a plurality of circular aperture 17. The two hemispherical half shells are received together at their circular bases 19 and 21 which are on the equator of the spherical ball 10. Suitable means are provided to retain the assembly of the two half shells 14 and 16. Various assembly means can be used, including threaded engagement or an interlocking slot and key engagement. The latter is preferred and is illustrated with one hemispherical half shell 14 bearing a plurality of raised keys 22 spaced about its inner wall which coact with mating offset grooves 24 that are spaced about the upstanding inner cylindrical wall 26 of the opposite hemispherical half shell 16. Each offset groove 24 has a long base slot 28 and a shorter entrance slot 30, thereby permitting an interlocking assembly and disassembly of the hemispherical half shells. Centrally disposed within the outer shell 12 formed by assembly of the hemispherical half shells is a balloon 32 formed of a thin membrane, preferably of plastic, and most preferably of an elastomer. An example of a suitable balloon is a rubber latex balloon. The balloon 32 forms an interior closure within the outer shell 12, and this enclosure has a port, open end 34, which can be used for filling the balloon and then can be sealed with a tie 35 in a customary manner.

Referring now to FIGURE 2, there is shown an elevational sectional view of the ball. As previously mentioned, the two half shells 14 and 16 are aligned and assembled together at

their bases and half shell 16 has a cylindrical wall 26 that is received within the other hemispherical half shell 14. The upper half shell 14 has a cylindrical inner wall 23 which presses against balloon 32 and stabilizes the balloon (see FIGURE 1) within the assembled shell. Received within half shell 16 is a timer and release subassembly 36 which has a subassembly housing 40 forming an interior chamber 42 which is covered by a support platform 44 which faces inwardly of the assembled outer shell 12. The platform 44 serves to support the balloon 32. Received within the housing of the timer and release mechanism is a spring-driven motor 48, which has a winding shaft 50 with a key, disc 46, to wind the spring of the motor. The drive motor 48 has an output shaft 52 which extends from the subassembly housing 40 and which supports cam 54 which has a single lobe 58.

The timer and release mechanism is also illustrated in FIGURES 3 and 4. As shown in FIGURE 3, the platform 44 has an aperture 56, in the form of a slot which receives cam 54 so that the single lobe 58 of the cam extends through the slot as the cam is rotated.

Referring now FIGURE 4, the motor and release subassembly is inverted from its position in FIGURE 3, showing the circular winding disc 46 which preferably has a single raised rib 60 which aids gripping of the disc 46.

As apparent from FIGURE 3, the cam is mounted adjacent the slot 56 so that its single lobe 58 will extend through the slot 56 and above the platform 44. The release means is a membrane rupturing member which comprises an abrasive layer 62 on the lobe 58 of the cam 54. Suitable abrasive layers include coatings of abrasives, e.g., a coating of sandpaper or alumina grit. As the cam is rotated, this abrasive layer 62 will rub against the membrane of balloon 32, tearing the membrane and thus rupturing the balloon to release its contents.

Referring now to FIGURE 5, there is illustrated an alternative embodiment of the invention. The outer shell 10

and the inner membrane container (not shown), are the same as previously described with reference to FIGURES 1 and 2. The timer and release mechanism 36 are also contained in a subassembly housing 40 and the motor 48 has a winding disc 46, all as previously described. In this embodiment, however, the release mechanism includes a pin member 64 which is slidably received in a cylindrical well 66 which depends from the underside 68 of the platform 44. The platform 44 has a single central aperture 70 (see FIGURE 6) through which the pin 72 of the pin member 64 can extend. The pin member 64 rides on the surface of the cam 55 and is biased against the cam 55 by a coil spring 74 which is received over the pin member 64. The pin member 64 is thus biased into a retracted position and is moved into its extended position shown in FIGURE 6 by the cam 55 with its single lobe 57.

Preferably a safety interlock is provided to prevent the pin 72 from extending through the aperture 70 when the two hemispherical half shells are disassembled. As shown in FIGURES 5 and 7, a slide member 76 is positioned in the base slot 28 of one of the grooves 24 so that it is forced downwardly when the mating key 22 of the other half shell enters the base slot. The lower end 75 of the slide member 76 rests on lever 77 which is pivotally mounted by pin 70, and is spring biased against the downward movement of slide member 76 by a compression spring 81. The opposite end of lever 77 extends through a window 83 in the side wall of the motor housing and engages a drive gear 85 of the motor, thus locking the motor and cam 55 against rotation. When the two halves of the outer shell 10 are assembled, slide member 76 depresses lever 77 and releases gear 85, permitting rotation of cam 55. Referring now to FIGURES 8 -10, there is illustrated an alternative embodiment. In this embodiment, the outer shell 21 is a single piece member having a port 91 at one end that receives a closure member 78. The shell 21 is foraminous and has a plurality of slots 80 spaced about its circumference. Rotatably received within the outer shell

21 is a second inner spherical member 83 which also has a plurality of slots 82 (see FIGURE 9) which can be rotated between a closed position with its wall between slots 82 closing the slots 80 of the outer member as shown in FIGURE 8, and an opened position in which its slots are rotated into alignment with the slots of the outer shell, as shown in FIGURE 9.

As shown in FIGURE 10, the inner member 83 has a cylindrical base 88 at one end which is received about a cylindrical well 90 of the outer shell 21, thereby providing a trunnion that rotationally supports the inner member 83. Preferably, the inner member 83 is spring biased into the position where its slots 82 are aligned with the slots 80 of the outer shell 11. As shown in FIGURE 10 this bias can be provided by a helical coil spring 84 which is mounted about the cylindrical base 88 of the inner member and is secured to the outer spherical shell 21.

A timer mechanism 86, which is substantially the same as that previously described is received within the cylindrical well 90 of the outer shell 21. This timer mechanism 86 has an output shaft 92 on which is mounted a cam 104 having a single lobe 108. The lobe 108 of the cam 104 engages a hook shaped latch member 94 that protrudes through the upper wall of the housing and into a single aligned recess 96 in the bottom wall 98 of the inner member 83. This recess extends partially into, but not through the bottom wall.

In this embodiment, the inner member 83 is rotated into a closed position shown in FIGURE 8 and the latch member 94 is engaged in the recess 96 in the undersurface of bottom wall of the inner member. The interior of the inner member can then be filled with water and the closure 78 is placed on the inner member and threaded into the upper neck of the inner member. As previously mentioned, the outer member receives the closure and has a sufficiently large aperture to permit the closure to be rotated within the outer shell.

The toy ball is used in the same manner as those previously described. The spring drive of the motor is wound and the motor is released to begin the rotation of the cam, thereby commencing the timed release of the contents of the ball. When the cam rotates into engagement with the latch member and retracts the latch member from its detenting position in the recess, the inner member is released and, under the tension of the spring, will rotate into the water releasing position shown in FIGURE 9.

The game comprises two or more participants, preferably several, to play catch with the toy ball. The objective of the game is to avoid getting wet when the timing mechanism releases the inner chamber and ruptures the inner chamber to release the water. As the timer winds down the ball is thrown between players who must catch the ball to avoid being disqualified. When a player catches the ball or is holding the ball and the inner member is ruptured, the water will discharge, wetting the player who is then disqualified from the game.

The invention has been described with reference to the illustrated and presently preferred embodiment. It is not intended that the invention be unduly limited by this disclosure of the presently preferred embodiment. Instead, it is intended that the invention be defined, by the means, and their obvious equivalents, set forth in the following claims:

WHAT IS CLAIMED IS:

1. A toy comprising a container with an enclosure filled with water and having opening means at a wall surface location, a wall opening means with a timer mechanism in operative engagement therewith to activate said wall opening means, and including randomly selectable time setting means whereby the duration of time interval between setting of said time setting means and activation of said wall opening means can be preset.

2. The toy of claim 1 wherein said wall is formed of a frangible wall element adjacent said location, and said wall opening means comprises frangible wall rupturing means operative to rupture said frangible wall element.

3. The toy of claim 2 wherein said container is a ball.

4. The toy of claim 3 wherein said timer mechanism is a motor driven rotary means having a cam surface which is operative to urge said rupturing means through said frangible wall.

5. The toy of claim 4 wherein said frangible wall enclosure is an elastic toy balloon.

6. The toy of claim 5 wherein said frangible wall rupturing means is a pin carried on a slidable cam follower member, and including spring means biasing said pin out of engagement with said toy balloon.

7. The toy of claim 5 wherein said frangible wall rupturing means comprises abrasive means carried on said cam surface and operative to abrade the surface of said toy balloon.

8. The ball of claim 1 including

a. an outer foraminous shell; and

b. an inner membrane member supported by said outer shell and forming a sealed enclosure therein.

9. The ball of claim 8 wherein said shell is spherical in external shape.

10. The ball of claim 9 wherein said outer shell is an assembly of two shell members with retention means to permit their removable assembly.

11. The ball of claim 8 wherein said timer means includes a motor.

12. The ball of claim 11 wherein said motor is a spring driven motor with key means to wind the spring.

13. The ball of claim 11 wherein said timer means includes a cam member rotatably driven by said motor and said release means includes a balloon rupturing member positioned adjacent said cam and moveable by said cam into a position to rupture said balloon.

14. The ball of claim 13 wherein said rupturing member is a pin member mounted between said cam and said balloon and slidable between a retracted position and an extended, balloon-rupturing position.

15. The ball of claim 13 wherein said rupturing member is a coating of an abrasive material on the lobe of said cam.

16. A game for at least two players, in which a ball, having a chamber and a timer controlled release mechanism operative to open said interior chamber and discharge the

contents thereof, is:

a. loaded with water within said interior chamber;

b. said timer is set to a time interval to actuate said release mechanism upon expiration of said time interval; and

c. said players throw the ball to each other and catch the ball, with the objective of avoiding being wetted with water from the interior chamber of the ball while catching, holding or throwing the ball at the moment that said timer actuates said release mechanism.

17. The game of claim 16 in which a player is disqualified and must withdrawn from the play when the ball releases water onto the player.

18. The game of claim 16 wherein a player is disqualified when the player fails to catch the ball.

19. The game of claim 16 in which a water soluble dye is dissolved in the water.

FIG. 1

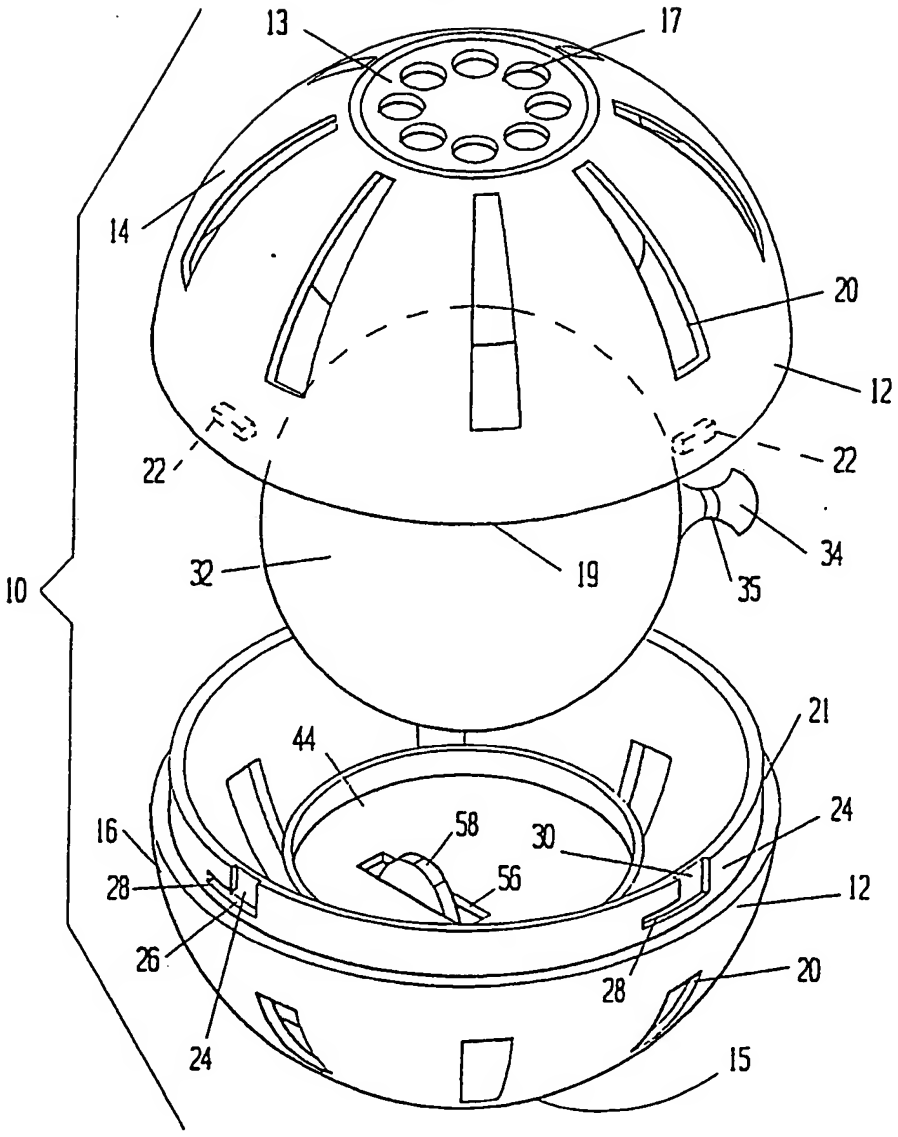
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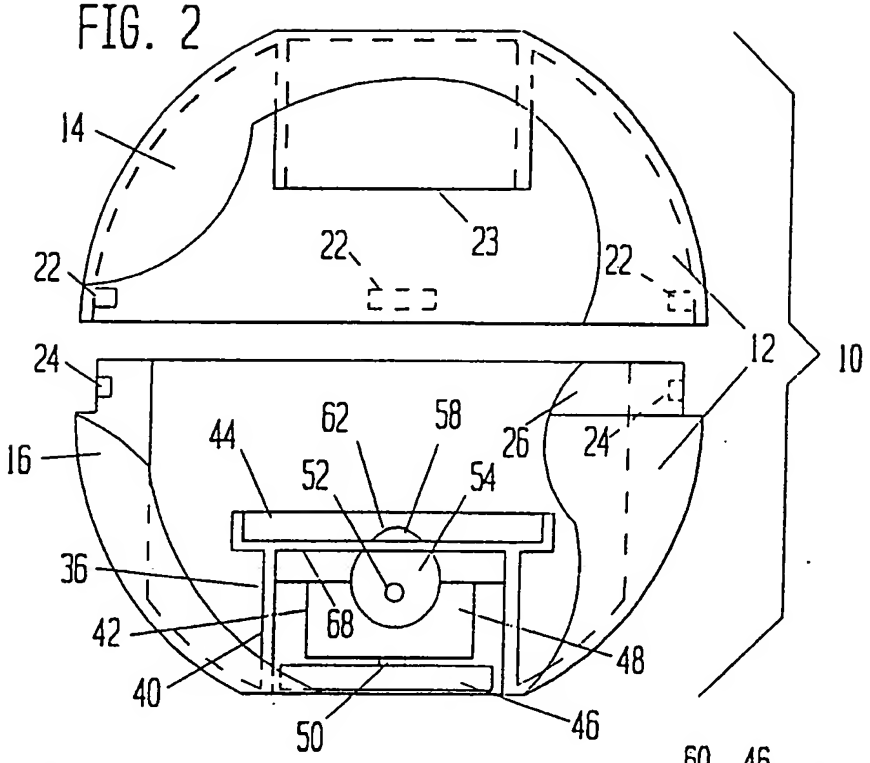
FIG. 2



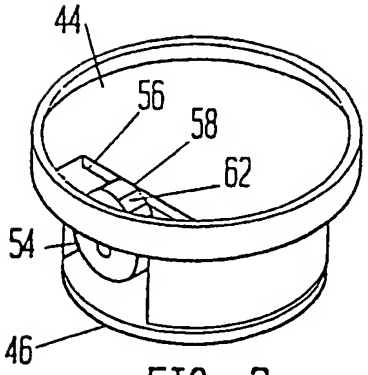


FIG. 3

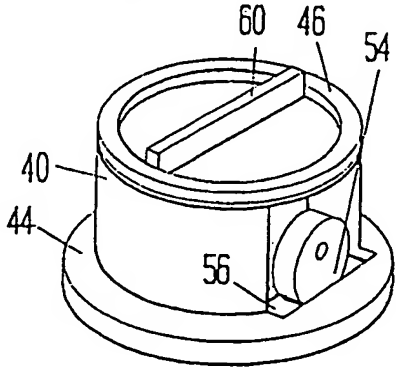
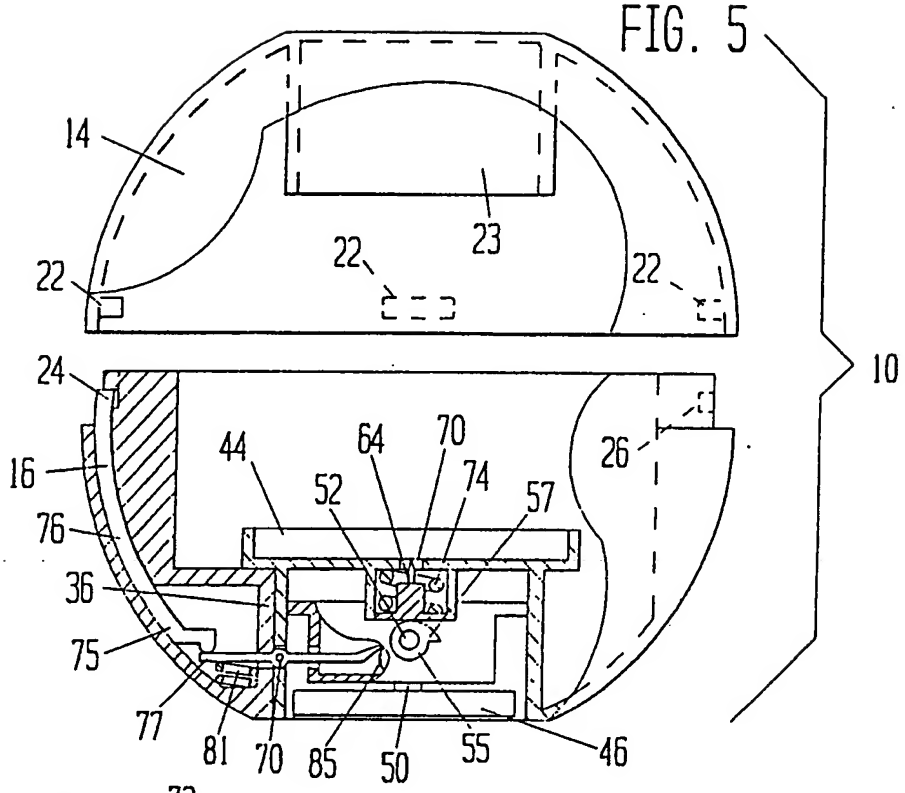


FIG. 4

FIG. 5



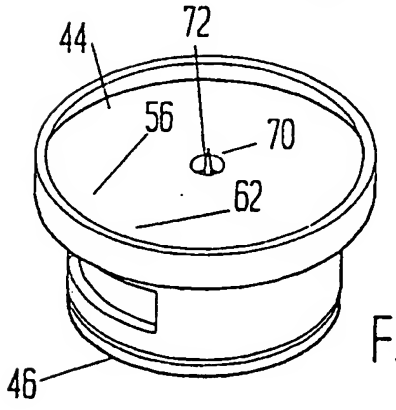


FIG. 6

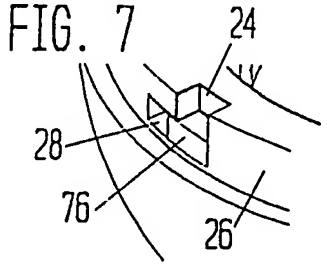


FIG. 7

FIG. 8

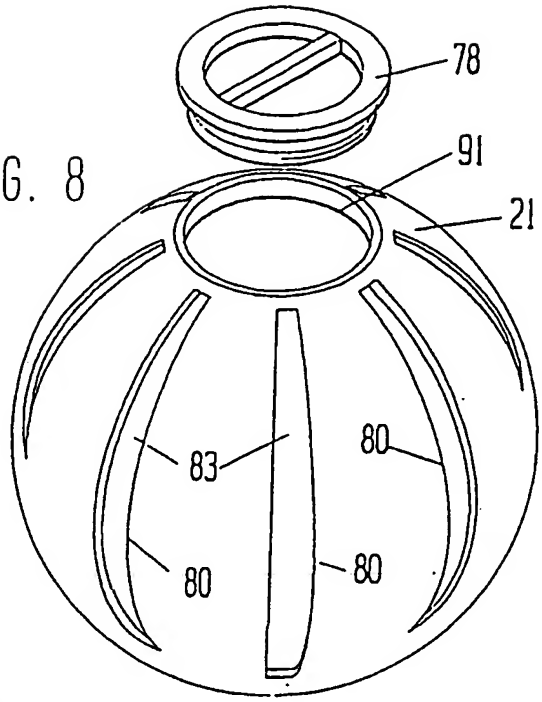


FIG. 9

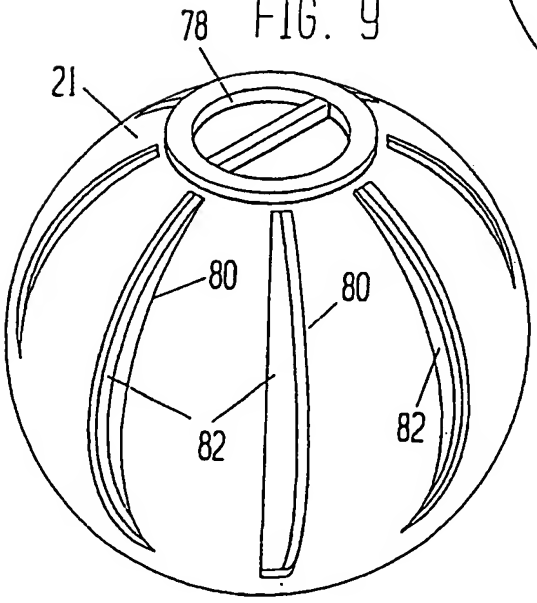
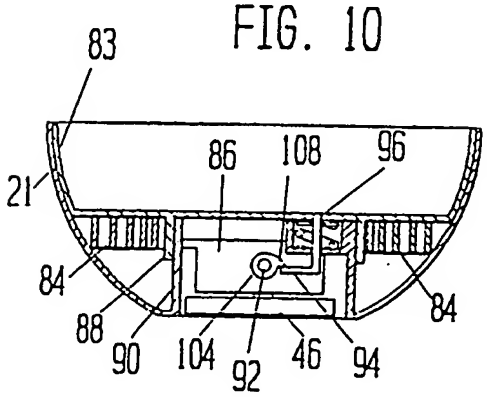


FIG. 10



INTERNATIONAL SEARCH REPORT

International Application No. PCT/US89/05839

I. CLASSIFICATION OF SUBJECT MATTER (if several classification symbols apply, indicate all) 6

According to International Patent Classification (IPC) or to both National Classification and IPC

IPC(5) A63F 9/00
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II FIELDS SEARCHED

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III. DOCUMENTS CONSIDERED TO BE RELEVANT 9

Category *	Citation of Document, 11 with indication, where appropriate, of the relevant passages 12	Relevant to Claim No. 13
X P Y	US, A, 4,881,733 (REHKEMPER ET AL.) 21 NOVEMBER 1989 See the entire document.	1,2 3-19
Y	US, A, 4,783,074 (KOBAYASHI) 08 NOVEMBER 1988 See figures 2-5,8,10,11-14 and 16-18 and col. 3-10	6,14
A	US, A, 3,795,400 (GLASS ET AL.) 05 MARCH 1974, See fig. 2 and the abstract.	
A	US, A, 4,212,460 (KRAFT) 15 JULY 1980, See fig. 4 and the abstract.	

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